NOTES ON EXHIBITS.

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Mr. President, Ladies, and Gentlemen,—

I have the honor to place before your Society to-night the following exhibits of more or less general interest. In the first place I would call your attention to two specimens (Exhibits A. 1 and 2) of an extraordinary egg-case formed by a scyllioid shark, *Chiloscyllium punctatum*. This case is unique among all other known forms in the means employed to attach it after deposition to some foreign substance, such as a projecting point of coral or the root of a mangrove, and so insure the safety of the young fish from stress of weather during its helpless fetal state. In this egg-case you will readily see that, in place of the long tendriliform tentacle arising from each corner of the "mermaid's purse," so familiar to all who know the shores of the British Isles, we have a cunningly fashioned handle attached to one of the longer sides of the case, thus forming a perfectly appointed "mermaid's bag," as shown in exhibit A. 1., while A. 2 is the case from which the fetal shark (Exhibit B) was taken. This discovery, for which we are indebted to the patient research of Mr. John T. Jamison of Woody Point, is the more interesting because it proves the oviparity of the typical hemiscylliine sharks, and necessitates a rearrangement of the scyllioid families, and incidentally confirms my long-expressed opinion of the generic validity of *Hemiscyllium modestum*, which I have placed with the "wobbegongs" (*Orectolobidæ*) under the new generic title *Brachælurus*. My views on the subject will be fully set forth in a paper now in preparation, which I hope soon to lay before the Society.

My next exhibits consist of specimens of small fresh-water fishes belonging to the family *Gobiidæ*, subfamily *Eleotrinæ*. These are chiefly remarkable in having been participators in the recent aerial escapade reported in the "Telegraph," where it was stated that during a heavy thunder-storm they came down alive in large numbers on Mildura Farm, Cooper's Plain's, last Monday; these specimens were in excellent condition, one in fact having survived its perilous journey through the air, and even more perilous journey corked up in a small medicine bottle for twelve hours in its captor's pocket. I may here state that though I have frequently read of these "showers of fishes," this is only the second authentic instance which has come directly under my notice, the earlier of these being a couple of specimens in poor condition sent from Killarney to the State Museum by our late Premier, the Hon. Arthur Morgan. These belonged to quite a different species from the Cooper's Plains' fishes, being examples of the pretty little Carp-Gudgeon (*Carassiops compressus*, Ogilby), so common in all the creeks and water holes in the vicinity of Brisbane. And here I should like to direct your attention to the two very dissimilar forms of this fish which exist in Southern Queensland. The typical form, originally described by Krefft, from the Clarence River, is a short, stout fish, living in sluggish, muddy creeks and swamps, and said to bury itself in the mud when pursued, as it habitually does during the winter months; the second form is long, slender, and half-starved in appearance, so that, if it were not for the absolute similarity of such structural charaters as the fin-formula and lepidosis as well as of the pattern of coloration, it might easily be taken for quite a distinct species; it may conveniently be separated as *C. c. montanus*. To this latter form (exhibit D) the Killarney examples belong, and, as I am informed by my friend Mr. Joseph Lamb, this variety is only found in the head waters of the Condamine, while in the low-lying lands, near the coast only the robust form occurs. Difference of food and environment alone can account for this dissimilarity.

The species, which forms the text of the present communication, belongs to another section of the same group

to which the fishes just referred to belong, and has a remarkable, if not a romantic history. Nearly eight years ago Mr. Alfred Gale, the well known apiarist, informed me that he had seen a number of fishes in a small stone tank, filled with various aquatic plants, in the Botanic Gardens, Sydney. With the permission of Mr. Maiden, we obtained some specimens, which to our astonishment proved to be a perfectly new eleotrin belonging to the *Carassiops* group, but differing generically in the larger number of dorsal spines and the greatly increased number of vertebræ. On these characters with many others of purely specific value, I named the species *Austrogobio galii*. Exhibit E). I have since found that is it a common Southern Queensland species known to boys as the "Firetail," and probable found its way into the Sydney tank by means of ova attached to the leaves of water plants.

Several theories have been propounded to account for the fall of various fishes during heavy rain-storms, the most generally accepted being that the phenomenon is due to a waterspout, but I think that the considerations here put forward will show that such a contention is untenable; in all authenticated cases the fishes, when examined by an expert—a very necessary proviso*—were found to belong to species wholly confined to a fresh-water existence, and it is a matter of common knowledge that we have nowhere in Queensland so large a body of fresh water as to be capable of giving birth to a water spout of such dimensions as to draw up with it hundreds of fishes; besides, a waterspout would not dissolve in rain but would come down *en masse*, to the destruction of the district on which it fell; also in both the cases of which I have cognizance the species affected were bottom-feeding fishes which would hardly come under the influence of a waterspout as would such high-swimming fishes as the fry of mullet or bony bream. It seems to me that a much more feasible method of accounting for the phenomenon is to be found in the accompanying explanation, which is, I believe, here suggested for the first time: Given that the cyclonic wind that usually precedes and, at least during its earlier stages, accompanies

* The Cooper's Plains' fishes were supposed to be young whiting (*Sillago*).

a thunder storm in these latitudes, enters the foot of a gully down which a small creek flows, and gathering strength both from its confined position and on account of the enormous pressure both behind and above it, compelled to take the only available direction—forward—it would, as the gully grew narrower towards its upper end, be forced more and more down to the surface of the ground, with the effect that all movable objects thereon would be carried along, and on reaching the head and meeting a contrary current of air would be whirled up to the skies to come down again perhaps many miles from their point of departure; a small stream of water flowing in an opposite direction to such a storm would be easily sucked up with all it contained. For the sake of comparison I exhibit a fine specimen of the "Crimson-spotted Trout-Gudgeon" (*Krefftius adspersus*, Ogilby), which is also abundant in the creeks round Brisbane (Exhibit F). If this beautiful species be kept in an aquarium, it should, when full grown, be associated only with fishes as large or larger than itself, as it has cannibalistic propensities, which lead it to devour its own and other fry, while specimens of two inches and even more are not immune, as it will attack them and gnaw off their fins.

My last exhibit (G) is a remarkable bone from the head of a selerodematous fish (either *Balistes* or *Monacanthus*), which appears to be an excrescence resultant on an injury, as it is not equally developed on both sides. The curious trigger-like apparatus by which these fishes are enabled to lock the first dorsal spine in an erect position for defensive purposes, is well shown in this exhibit, which has been lent to me by Mr. Squires.